North Carolina State Government
State Chief Information Officer

Report on the Management Of Legacy Application Assets

Michael F. Easley
Governor

George Bakolia
Chief Information Officer

February 2007

State of North Carolina
Office of Information Technology Services

Michael F. Easley, Governor **George Bakolia, State Chief Information Officer**

February 15, 2007

The Honorable Marc Basnight
President Pro Tempore
North Carolina Senate
Raleigh, NC

The Honorable Joe Hackney
Speaker
North Carolina House of Representatives
Raleigh, NC

Dear Senator Basnight and Speaker Hackney:

I am pleased to present an updated report on North Carolina's computer applications, the software programs that help operate state government and deliver services to citizens.

North Carolina has made great progress in managing its applications since passage of G.S. 147-33.90 in 2003. As part of a comprehensive asset management system, we have developed a detailed inventory that will help all of us plan for the upkeep and eventual replacement of the state's applications.

This report, which is based on information supplied by agencies, indicates that the state's 1,257 applications are in relatively good shape. The average age is 9 years, close to the industry average. But 85 of the 1,257 need close attention because they have potential problems and are considered critical for either departmental or statewide operations.

I appreciate the General Assembly's support for better management of the state's information technology, and I look forward to discussing this report with you and others.

Sincerely,

George Bakolia

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2007-09 Report on the Management of Legacy Application Assets of North Carolina State Government

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Executive Summary

Legacy applications are software assets that assist departments in performing business operations and providing services to citizens. They are the computer programs that constituents use for accessing information and transacting business with the state. State employees employ them to accomplish business functions in support of departmental missions, goals, and objectives. These applications are supported by the state's physical infrastructure of computing, data storage, and networking facilities, as well as technical staff.

The management of legacy applications is an important part of the overall management of information technology because well-managed applications make state government operations more efficient and effective. Applications also represent huge dollar investments; and they are expensive to operate and maintain. The intent of application management is to optimize costs-benefits, reliability, and value over their useful lives, while minimizing risks.

The Office of the State CIO has implemented an applications portfolio management (APM) software package. The process is composed of three parts: 1) inventory; 2) determine present status regarding costs to operate and maintain, ability to support business processes, technical condition, and risk of failure; and 3) develop a management plan for utilizing the best approaches and timeframes to functionally enhance, technically renovate, maintain, and/or retire and replace.

The state has almost 1,300 applications, with an average age of 9 years. Almost 200 of these applications are potentially at risk, with 85 applications being both critical to state operations and at potential risk. Around 150 applications are over 20 years old, and a little over 40 of these older applications have potential problems. Almost 110 applications have costs that may be out-of-line, suggesting a need for more detailed cost-benefit analyses on these. Significant modernizations or replacements are planned within the coming three years for about 250 applications. These 250 applications include 58 of the 85 that are critical to state government and have potential problems.

The future focus of the State CIO includes the providing of assistance to departments in developing plans for addressing the long-term management of applications assets. Specific areas of interest include those 85 assets that have been identified as critical to state operations and also present problems that may create at-risk situations. Attention also will be directed to building upon the efforts expended and lessons learned in the implementation of the APM package by reinforcing the concept of managing applications as an ongoing and repetitive process – not a biennially performed sporadic effort.

Purpose and Background

Purpose

The purpose of this report is to provide key information and supporting statistics regarding the status of the state's application assets and the approach for managing them over their useful lives. Applications are installed software programs that support the state's business processes and governmental operations, and they are departmental assets that are owned and managed by the agencies. The management of application assets is important because:

- They are essential for performing the operations of state government and providing services to its citizens.
- They represent significant capital investments and are expensive to operate and maintain.
- They present risks in the areas of security, confidentiality of records, privacy of individuals, and integrity of operations and services – resulting in unfavorable public repercussions in the event of failure.
- They enable cost-efficiencies and responsive and quality services to constituents, when implemented properly, operated proficiently, and maintained effectively.

The statistical information in this report was obtained from data provided by the agencies in the state's applications portfolio management (APM) software and developed from subsequent analysis of that information performed by State CIO staff. Much of the information presented in this document is summary in nature; however, more detailed and specific data and analyses are available.

Background

Over the past several years, the General Assembly has enacted legislation aimed at the better planning, budgeting, and management of information technology (IT) in state government. A major component of this theme is a provision of G.S. 147-33.90 regarding the management of legacy applications. Biennial reports to the General Assembly are required by the underlying legislation, and the first was submitted in early 2005.

The initial report resulted from a comprehensive study performed with the assistance of an outside firm. The primary purposes of the study were to identify applications that presented risks needing immediate attention and to further categorize applications by timeframes for remediation or replacement. The

report indicated that while there were some applications that merited close attention, in general, state's applications inventory was acceptable. The costs of operating and maintaining these applications were not included in the study. In summary, the report focused on fact-finding (where we stand and what may be required), and it was a snapshot at a certain time.

Over the past biennium, the State CIO has implemented a portfolio management tool, with an application portfolio management component. The objectives of this initiative are to:

- Assist the State CIO in performing his oversight and reporting responsibilities.

- Provide inventory, analysis, and decision making support to the agencies, as they are responsible and accountable for the cost-effective management of these assets.

- Recognize potential problem situations in order to take timely and appropriate actions for optimizing benefits-costs while minimizing risks.

Aware that the APM tool alone would not be sufficient for agency executive, business, and technical staff to perform their duties and responsibilities for managing applications; the State CIO sponsored a comprehensive education program focusing on the theories, disciplines, and best practices for APM. Processing templates, logic models, and detailed instructions were developed to assist agencies in applying key APM concepts when using the tool for performing relevant analyses and addressing pertinent questions. Moreover, state staff assisted agency personnel in the initial efforts for creating the applications inventory, validating data, performing analyses, and determining action plans.

Much progress has been made in gaining in-house knowledge and experience and viewing the management of applications as ongoing, structured, and sustained efforts – not sporadic events. As stated above, the first study was external, while the results in this report come from data provided by the agencies and decisions made by them, following both theoretical and practical training.

This document is concerned primarily with the status of applications and intentions for the remediation or replacement of them. This thrust follows the intention of the State CIO in purchasing the APM tool for assisting agencies in proactively managing their applications. That is:

- Inventorying them.

- Determining their present status:

    - Costs to operate and maintain.

- Ability to support current and future agency business strategies and models and governmental program operations.
- Fit with state and agency technical architectures.
- Risk of failure, due to lack of staff or vendor support, technical obsolescence, component malfunction, security vulnerabilities, etc.

- Determining the best approaches and timeframes for consolidating, eliminating, functionally enhancing, technologically renovating, retiring/replacing, or continuing to maintain them.

Statistical Highlights

The table below offers some key statewide statistics for the 1,257 legacy applications inventoried in the applications portfolio management software. More detailed information by agency and statewide totals is presented in Appendix 1.

Description	Number	Significance
General Information		
Total number of active applications	1,257	Indicates large size of portfolio
Applications that agencies indicate will be modernized or replaced over the next three years	248	Significant makeover planned for 20% of portfolio
Potential Problem Applications		**See Notes 1 and 2**
Total applications with potential problems	196	15% of portfolio potentially at risk
Potential problem applications that are classified as critical to statewide or department operations	85	7% of portfolio requires close attention, as these are both critical and potentially at risk
Potential problem applications that are classified as critical and have plans to remediate or replace within the next three years	58	68% of close attention applications planned for near-term action
Age Exception Applications		**See Note 1**
Average age of statewide portfolio	9 years	Portfolio is close to industry average, but the average age is increasing
Applications over 20 years old	154	12% of portfolio is subject to potential problems due to age
Applications over 20 years old and with potential problems	43	25% of older applications have potential problems
Applications over 20 years old with potential problems and have plans to remediate or replace within the next three years	31	Near-term action planned for most of older applications with potential problems
Cost Exception Applications		**See Note 3**
Applications with high costs	108	About 10% of applications have costs that should be reviewed
Applications with high costs that are classified as non-critical	9	Potential candidates for elimination or consolidation

Note 1: Potential problem applications are those that have low architectural fit scores, low operational performance scores, and/or high risk scores.

Note 2: Critical applications are those that are considered important to statewide or departmental operations.
Note 3: High costs for analysis purposes are annual operating and maintenance costs over $250,000.

Key Concepts for Managing Applications

Application portfolio management is the discipline of understanding, prioritizing, and optimizing application assets that are in production. The intents are to optimize cost-benefits over useful lives while minimizing risks and to align the applications portfolio with business strategies. The objective of APM is to maintain good awareness of the portfolio and to optimize life cycle cost, quality, risks, and value.

APM is based on the following understandings embedded in the concept of the life cycle management of assets:

- The total cost of ownership (TCO) approach recognizes the total real cost of an asset over time (purchase, plus operation and maintenance, plus enhancement and renovate, and ultimately retirement/decommission).

- Applications reach a point of diminishing returns, where increased investments buy smaller increments of improved function and quality, and ultimately a point will be reached where further investment will neither reduce risk nor add value. Eventually, a point is reached where it is more economical to replace than to continue to maintain.

- Applications, like any other technical assets, do not last forever; therefore, it is necessary to plan early for the eventual retirement/replacement of them.

The strategy of APM has three separate but related parts:

- Transitioning (maintain, technically renovate, functionally enhance, etc.) applications over their useful lives from purchase/installation through retirement (elimination, consolidation, or replacement) to optimize value, costs, and budgets and align with business models and plans.

- Preventing high-risk applications from entering the portfolio by following technical architecture principles and guidelines and infrastructure asset standards and avoiding unnecessary technical complexities.

- Preventing applications that are operationally efficient, have high-business worth, and are low-risk from deteriorating in business value, operational performance, or risk acceptability.

APM is critical to understanding and managing the significant and increasing percent of IT budgets devoted to maintaining and enhancing software. Applications (like any other business assets) must be reviewed periodically to ensure ongoing viability. An industry best practice is to assess applications on at least an annual basis to identify changes in value and risk over time, to build consensus (and funding support) for gradual change, and to spot trends in value and risk early enough to avoid sudden surprises and disruptions to the business. The continued viability of application assets should be seriously questioned if they become an obstacle for the sustainability or growth of the business, are at the end of the life cycles for their underlying technology, or are no longer cost-justified or risk-acceptable.

Since the intent is to manage applications though forward-looking and thorough planning for accomplishing more cost-effective change, APM must follow a perpetual and disciplined approach. The reviews of portfolios, assessments of individual applications, and development of management plans must be performed as ongoing repetitive activities – not intermittent studies.

Next Steps

Classification of Application Assets

The management of legacy applications involves the answering of three sets of questions:

1. **What is the status?** How old is the application? Is it technologically current and does it fit into the organization's technical architecture? How well does it enable governmental priorities and support current and future business models and operational processes, including growth and innovation? How much does it cost to operate and maintain, and are these costs excessive? What is its operational reliability, and does it satisfy business availability requirements? Does it present unnecessary risks or vulnerabilities, including internal staffing availability, vendor support dependability, and security considerations?

2. **What is the priority and urgency for action?** Is it an essential component of the organization's important business processes? To what extent does it constrain or limit the successful accomplishment of key business strategies, goals, and objectives? How severe are its technical problems, and what is the urgency of remediation? What are the probabilities of occurrence for its risks and vulnerabilities, and what are the severities of the impacts if they materialize?

3. **What action should be taken?** Are there broad-based initiatives (such as infrastructure consolidation, broad-scope system

implementation programs involving multiple applications, or other cross-organizational or cross-application efforts) that will include the application? Are there changes in strategic business directions that will influence the options for actions? Are there broad-based technical initiatives (such as service oriented architecture, Web-based services, or determining appropriate platforms) that may assist in remediation efforts. What are the opportunities for elimination or consolidation with other application(s) supporting the same or similar business purposes? What are funding availabilities? What are other options for remediation (such as using data warehouses or statistical analysis packages, performing technical renovations, or accomplishing functional enhancements)?

The information in the tables of Appendix 1 is used to respond to the first question above. More specifically, these tables illustrate the key considerations and metrics that are used to determine the status (or health) of an application and extent of identified problems. This exercise is analogous to examining a patent, identifying potential problems, and determining the extent or seriousness of those problems (i.e., developing a diagnosis).

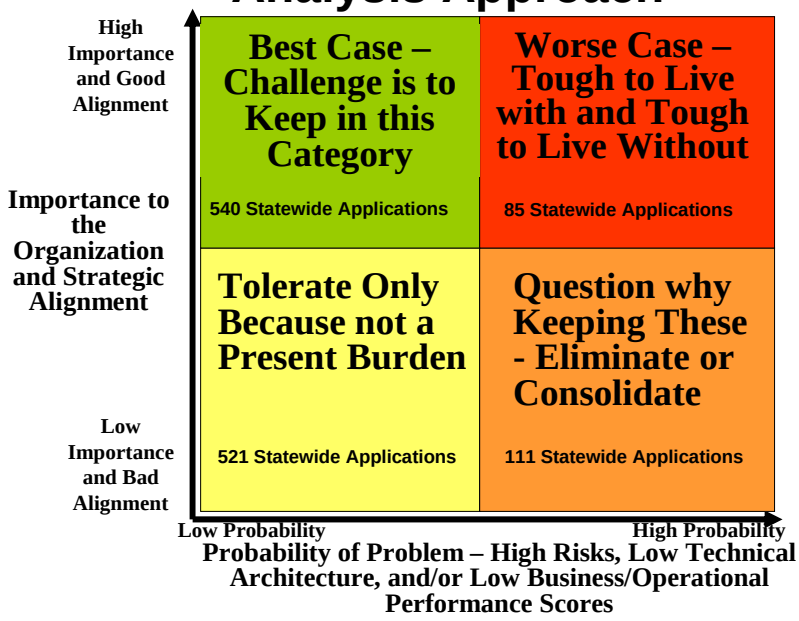
An approach for addressing the second question above is to classify applications by two criteria:

- **Business value** – criticality or importance of the application to the organization, including its strategic alignment with the organization's current and future business goals and objectives.

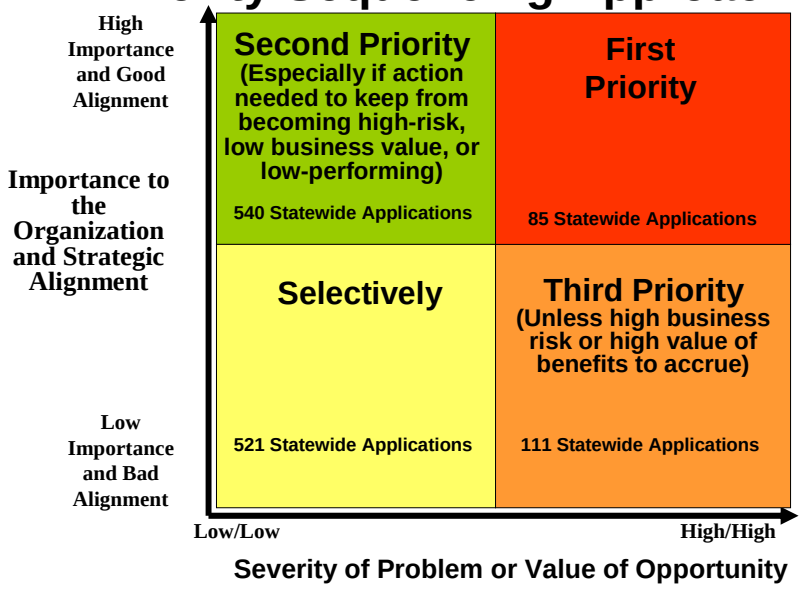
- **Business and technical status** – low or high scores for risks; fit with technical architecture; and business, operational, and cost performance.

The diagrams below illustrate this classification and priority setting scheme.

Application Portfolio Management Analysis Approach



Application Portfolio Management Priority Sequencing Approach



Application Asset Classification Statistics

The two diagrams above show the number of applications falling into the four categories for determining priorities and urgency of actions. There are 85

applications that are important to state operations and present potential problems so that they may be at risk of not being able to support business processes. Of these, agencies have indicated intentions to modernize or retire and replace 58 within the coming three years (2007-2010).

Future Focus Areas

The statistical analysis capabilities of the APM tool has provided insightful and useful information for agency staff to use in addressing the third question above regarding what action must be taken and reevaluating the priority or urgency of that action. As described above, a broad diversity of actions are available for the cost-effective management of legacy applications to optimize benefits-costs and value and minimize risks over their useful lives. The best management approach requires investigation, analysis, and evaluation beyond the data available in and the analyses performed by the APM software.

Therefore, the next steps include the providing of assistance to agencies in obtaining the necessary information, performing the appropriate research and analyses, and formulating responsive and cost-effective approaches and plans for addressing the long-term management of applications assets. The initial emphasis will be on the 85 applications identified as critical to state operations and presenting potential problems that may cause an at-risk situation. The individual approaches should be consolidated into a statewide plan that accomplishes the following objectives:

- Ensures that business-critical and high-risk applications are accurately identified and addressed in a cost-effective and technically-appropriate manner.

- Takes advantage of economies of scale and commonalities in remediation approaches from a statewide perspective in order to perform the modernization actions using the most economical methods.

- Provides a comprehensive budget package for evaluation by funding bodies, so that they can appropriately balance costs, risks, and benefits in their decision making activities.

Appendix 1 – Key Application Statistics

The following seven tables provide statistical information from the APM software by agency and statewide totals. Descriptions and definitions are given below.

- **Table 1 - General Statistical Information** contains overview information of interest in determining the priority and urgency for further review and evaluation of individual applications. **Problem applications** are those that have low architectural fit scores, low operational performance scores, and/or high risk scores. **Critical applications** are those classified as critical to statewide or departmental operations.

- **Table 2 - Age Statistical Information** provides average age and number of applications in various age categories. Age, by itself, is not an indicator of problems, risk, or priority; however, older applications are more subject to problem and risk factors, such as technical obsolescence, lack of vendor support, inability to meet changing business requirements, etc.

- **Table 3 - Cost Statistical Information** gives order of magnitude cost information for operating and maintaining applications. These costs may be useful in justifying remediation or replacement decisions that offer lower annual operating expenses and recognizing opportunities for retiring high-cost/non-critical applications to redirect funds for optimizing IT expenses.

- **Table 4 - Disaster Recovery Statistical Information** offers return-to-service time requirements for applications, and it gives the location for backup facilities (ITS or other). Other could be at the department, outsourcer, or no backup capabilities.

- **Table 5 - Potential Problem Statistical Information** identifies total applications with potential problems and those by problem type.

- **Table 6 - Critical and Non-Critical Statistical Information** gives the number of applications by type of criticality. The column labeled **Critical Applications** is the sum of the columns labeled **Statewide Critical** and **Department Critical** (the two highest levels of criticality). This is the same number as that in the column labeled **Critical Applications** in the **General Statistical Information** (first table above).

- **Table 7 – Plans** gives the number of applications with intentions for modernization or replacement within the next three years.

Table 1 - General Statistical Information

Agency APM Analysis - General	Number of Active Applications	Applications with Plans in Roadmap for FY 2008-2010	Total "Problem" Applications	Critical Applications	Average Age of Applications	Total FY 2006 Operations and Maintenance Application Costs
Administration, Department of	53	0	22	31	7.60	$799,164
Administrative Hearings, Office of	3	2	1	2	4.67	$12,490
Agriculture and Consumer Services, Department of	79	0	7	6	11.49	$2,286,271
Auditor, Office of the State	4	1	0	4	3.75	$121,084
Budget and Management, Office of State	7	0	1	1	13.50	$478,294
Commerce, Department of	22	5	4	12	6.86	$466,699
Controller, Office of the State	8	1	2	8	13.25	$5,384,210
Correction, Department of	27	2	0	9	4.73	$12,387,771
Crime Control and Public Safety, Department of	79	2	8	46	13.73	$3,705,175
Cultural Resources, Department of	37	12	18	11	12.86	$430,503
Employment Security Commission	19	0	0	16	12.20	$5,485,468
Environment and Natural Resources, Department of	178	91	27	53	7.37	$5,968,945
Health and Human Services, Department of	230	22	25	100	10.44	$92,394,851
Information Technology Services, Office of	11	1	3	7	6.82	$4,265,347
Insurance, Department of	12	4	4	7	7.38	$911,446
Justice, Department of	93	22	22	64	8.72	$2,244,933
Juvenile Justice and Delinquency Prevention, Department of	11	11	6	1	3.36	$352,939
Labor, Department of	7	6	0	7	4.43	$23,916
North Carolina Community Colleges	6	5	0	6	10.50	$734,132
Personnel, Office of State	2	1	1	2	26.00	$1,688,222
Public Instruction, Department of	93	11	15	77	10.43	$26,329,699
Revenue, Department of	13	4	1	8	7.23	$13,248,445
Secretary of State, Department of the	4	1	3	3	13.50	$469,882
State Board of Elections	6	4	0	5	5.17	$1,722,000
Transportation, Department of	223	35	15	126	7.12	$54,412,709
Treasurer, Department of the State	29	5	11	12	9.77	$1,672,379
Wildlife Resources Commission	1	0	0	1	2.00	$1,721,063
State Totals:	**1257**	**248**	**196**	**625**	**9.13**	**$239,718,037**

Table 2 - Age Statistical Information

Agency APM Analysis - Age	Number of Active Applications	Average Age of Applications	Over 5 Years Old	Over 10 Years Old	Over 15 Years Old	Over 20 Years Old
Administration, Department of	53	7.60	32	16	4	1
Administrative Hearings, Office of	3	4.67	1	0	0	0
Agriculture and Consumer Services, Department of	79	11.49	51	38	21	20
Auditor, Office of the State	4	3.75	2	0	0	0
Budget and Management, Office of State	7	13.50	5	4	4	3
Commerce, Department of	22	6.86	13	4	3	1
Controller, Office of the State	8	13.25	7	5	3	2
Correction, Department of	27	4.73	13	1	0	0
Crime Control and Public Safety, Department of	79	13.73	58	45	37	37
Cultural Resources, Department of	37	12.86	30	19	15	7
Employment Security Commission	19	12.20	18	12	7	2
Environment and Natural Resources, Department of	178	7.37	113	37	11	5
Health and Human Services, Department of	230	10.44	193	94	52	32
Information Technology Services, Office of	11	6.82	7	2	1	0
Insurance, Department of	12	7.38	9	1	1	1
Justice, Department of	93	8.72	64	26	14	10
Juvenile Justice and Delinquency Prevention, Department of	11	3.36	3	0	0	0
Labor, Department of	7	4.43	5	0	0	0
North Carolina Community Colleges	6	10.50	6	2	2	1
Personnel, Office of State	2	26.00	2	2	2	2
Public Instruction, Department of	93	10.43	76	42	22	13
Revenue, Department of	13	7.23	9	4	1	0
Secretary of State, Department of the	4	13.50	4	2	2	2
State Board of Elections	6	5.17	5	0	0	0
Transportation, Department of	223	7.12	145	48	16	14
Treasurer, Department of the State	29	9.77	20	9	4	1
Wildlife Resources Commission	1	2.00	0	0	0	0
State Totals:	**1257**	**9.13**	**891**	**413**	**222**	**154**

Table 3 - Cost Statistical Information

Agency APM Analysis - Cost	Number of Active Applications	Total FY 2006 Operations and Maintenance Application Costs	Applications with O&M costs over $100,000/Year	Applications with O&M costs over $250,000/Year	Applications with O&M costs over $500,000/Year	Applications with O&M costs over $1,000,000/Year
Administration, Department of	53	$799,164	2	1	0	0
Administrative Hearings, Office of	3	$12,490	0	0	0	0
Agriculture and Consumer Services, Department of	79	$2,286,271	3	1	1	1
Auditor, Office of the State	4	$121,084	0	0	0	0
Budget and Management, Office of State	7	$478,294	0	0	0	0
Commerce, Department of	22	$466,699	1	0	0	0
Controller, Office of the State	8	$5,384,210	6	4	3	1
Correction, Department of	27	$12,387,771	10	4	2	1
Crime Control and Public Safety, Department of	79	$3,705,175	4	3	1	1
Cultural Resources, Department of	37	$430,503	0	0	0	0
Employment Security Commission	19	$5,485,468	10	7	4	2
Environment and Natural Resources, Department of	178	$5,968,945	5	4	3	2
Health and Human Services, Department of	230	$92,394,851	40	25	15	12
Information Technology Services, Office of	11	$4,265,347	7	5	2	2
Insurance, Department of	12	$911,446	1	1	0	0
Justice, Department of	93	$2,244,933	2	1	0	0
Juvenile Justice and Delinquency Prevention, Department of	11	$352,939	1	1	0	0
Labor, Department of	7	$23,916	0	0	0	0
North Carolina Community Colleges	6	$734,132	2	1	0	0
Personnel, Office of State	2	$1,688,222	1	1	1	1
Public Instruction, Department of	93	$26,329,699	8	3	1	1
Revenue, Department of	13	$13,248,445	8	4	4	4
Secretary of State, Department of the	4	$469,882	3	0	0	0
State Board of Elections	6	$1,722,000	2	2	2	0
Transportation, Department of	223	$54,412,709	69	37	22	12
Treasurer, Department of the State	29	$1,672,379	5	2	0	0
Wildlife Resources Commission	1	$1,721,063	1	1	1	1
State Totals:	**1257**	**$239,718,037**	**191**	**108**	**62**	**41**

Table 4 - Disaster Recovery Statistical Information

Agency APM Analysis – DR/BCP	Number of Active Applications	Return to Service Requirement under 8 Hours	Return to Service Requirement Between 8 and 24 Hours	Service Requirement Over 24 Hours	Backup and Restore at ITS	Backup and Restore Other
Administration, Department of	53	15	0	0	6	47
Administrative Hearings, Office of	3	0	0	3	0	3
Agriculture and Consumer Services, Department of	79	16	11	28	15	64
Auditor, Office of the State	4	1	1	1	0	4
Budget and Management, Office of State	7	2	0	0	5	2
Commerce, Department of	22	6	3	12	1	21
Controller, Office of the State	8	1	0	7	6	2
Correction, Department of	27	18	4	4	22	5
Crime Control and Public Safety, Department of	79	1	40	36	2	77
Cultural Resources, Department of	37	6	2	21	0	37
Employment Security Commission	19	9	5	4	10	9
Environment and Natural Resources, Department of	178	13	47	112	10	168
Health and Human Services, Department of	230	30	18	178	73	157
Information Technology Services, Office of	11	6	0	5	9	2
Insurance, Department of	12	2	1	9	1	11
Justice, Department of	93	34	12	47	0	93
Juvenile Justice and Delinquency Prevention, Department of	11	1	2	8	0	11
Labor, Department of	7	0	6	0	0	7
North Carolina Community Colleges	6	0	0	0	0	6
Personnel, Office of State	2	0	0	0	1	1
Public Instruction, Department of	93	18	37	23	21	72
Revenue, Department of	13	5	5	3	3	10
Secretary of State, Department of the	4	1	0	0	1	3
State Board of Elections	6	0	2	4	0	6
Transportation, Department of	223	5	95	123	96	127
Treasurer, Department of the State	29	2	7	19	0	29
Wildlife Resources Commission	1	1	0	0	0	1
State Totals:	**1257**	**193**	**298**	**647**	**282**	**975**

Table 5- Potential Problem Statistical Information

Agency APM Analysis - Problems	Number of Active Applications	Total "Problem" Applications	Applications with Technical Issues	Applications with Risk Issues	Applications with Operational Performance Issues
Administration, Department of	53	22	22	0	1
Administrative Hearings, Office of	3	1	1	1	0
Agriculture and Consumer Services, Department of	79	7	7	1	0
Auditor, Office of the State	4	0	0	0	0
Budget and Management, Office of State	7	1	1	0	0
Commerce, Department of	22	4	4	1	0
Controller, Office of the State	8	2	2	1	0
Correction, Department of	27	0	0	0	0
Crime Control and Public Safety, Department of	79	8	8	0	0
Cultural Resources, Department of	37	18	18	0	0
Employment Security Commission	19	0	0	0	0
Environment and Natural Resources, Department of	178	27	27	0	1
Health and Human Services, Department of	230	25	25	0	2
Information Technology Services, Office of	11	3	3	0	0
Insurance, Department of	12	4	4	0	0
Justice, Department of	93	22	22	1	0
Juvenile Justice and Delinquency Prevention, Department of	11	6	6	0	0
Labor, Department of	7	0	0	0	0
North Carolina Community Colleges	6	0	0	0	0
Personnel, Office of State	2	1	0	0	1
Public Instruction, Department of	93	15	12	5	0
Revenue, Department of	13	1	1	0	0
Secretary of State, Department of the	4	3	3	0	1
State Board of Elections	6	0	0	0	0
Transportation, Department of	223	15	15	0	0
Treasurer, Department of the State	29	11	11	0	0
Wildlife Resources Commission	1	0	0	0	0
State Totals:	**1257**	**196**	**192**	**10**	**6**

Table 6 - Critical and Non-Critical Statistical Information

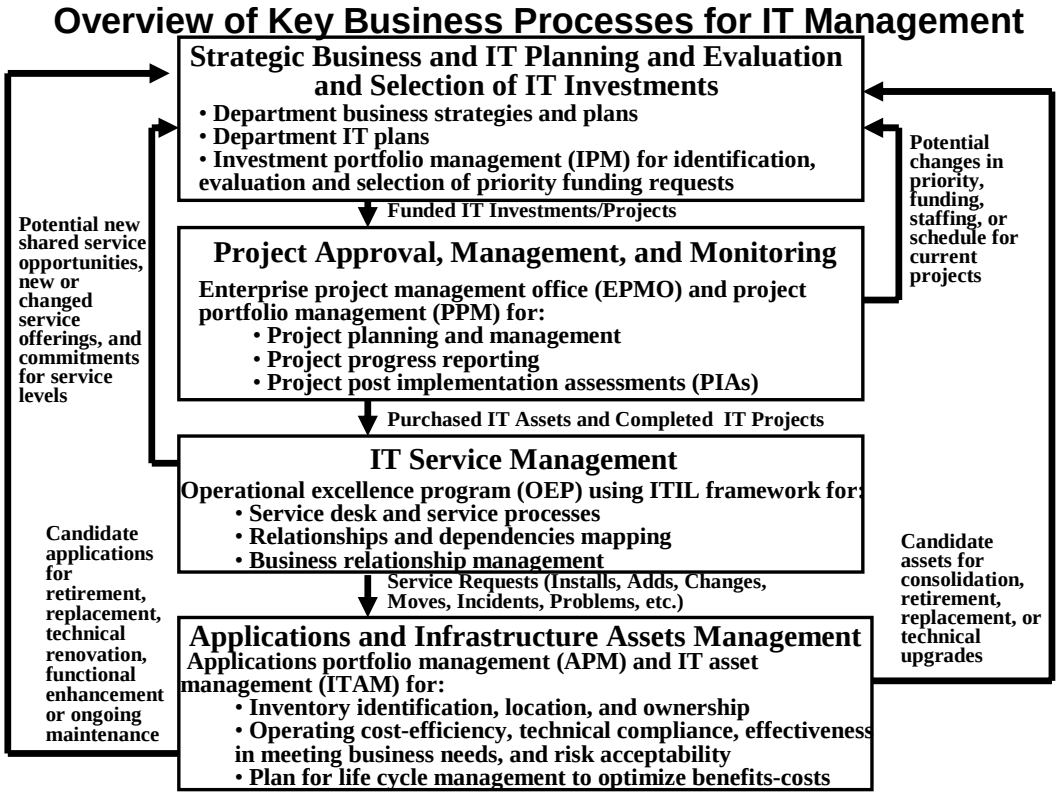
Agency APM Analysis - Critical	Number of Active Applications	Critical Applications	Statewide Critical Applications	Department Critical Applications	Program Critical Applications	Non-Critical Applications
Administration, Department of	53	31	20	11	20	2
Administrative Hearings, Office of	3	2	2	0	1	0
Agriculture and Consumer Services, Department of	79	6	3	3	62	11
Auditor, Office of the State	4	4	1	3	0	0
Budget and Management, Office of State	7	1	0	1	6	0
Commerce, Department of	22	12	0	12	7	2
Controller, Office of the State	8	8	7	1	0	0
Correction, Department of	27	9	0	9	15	3
Crime Control and Public Safety, Department of	79	46	12	34	23	10
Cultural Resources, Department of	37	11	5	6	14	12
Employment Security Commission	19	16	7	9	0	3
Environment and Natural Resources, Department of	178	53	31	22	82	43
Health and Human Services, Department of	230	100	36	64	115	15
Information Technology Services, Office of	11	7	5	2	1	3
Insurance, Department of	12	7	3	4	1	4
Justice, Department of	93	64	14	50	14	15
Juvenile Justice and Delinquency Prevention, Department of	11	1	0	1	6	4
Labor, Department of	7	7	0	7	0	0
North Carolina Community Colleges	6	6	1	5	0	0
Personnel, Office of State	2	2	2	0	0	0
Public Instruction, Department of	93	77	34	43	8	8
Revenue, Department of	13	8	0	8	4	1
Secretary of State, Department of the	4	3	0	3	0	1
State Board of Elections	6	5	5	0	1	0
Transportation, Department of	223	126	51	75	61	36
Treasurer, Department of the State	29	12	2	10	9	8
Wildlife Resources Commission	1	1	0	1	0	0
State Totals:	**1257**	**625**	**241**	**384**	**450**	**181**

Table 7 - Remediation Plans Statistical Information

Agency APM Analysis - Plans	Number of Active Applications	Applications with Plans in Roadmap for FY 2008-2010	Applications with Remediation Plans in 2008	Applications with Remediation Plans in 2009	Applications with Remediation Plans in 2010
Administration, Department of	53	0	0	0	0
Administrative Hearings, Office of	3	2	2	0	0
Agriculture and Consumer Services, Department of	79	0	0	0	0
Auditor, Office of the State	4	1	1	1	1
Budget and Management, Office of State	7	0	0	0	0
Commerce, Department of	22	5	3	3	1
Controller, Office of the State	8	1	1	0	0
Correction, Department of	27	2	2	1	1
Crime Control and Public Safety, Department of	79	2	2	2	2
Cultural Resources, Department of	37	12	12	3	1
Employment Security Commission	19	0	0	0	0
Environment and Natural Resources, Department of	178	91	49	35	69
Health and Human Services, Department of	230	22	19	15	14
Information Technology Services, Office of	11	1	0	1	0
Insurance, Department of	12	4	2	2	2
Justice, Department of	93	22	16	7	3
Juvenile Justice and Delinquency Prevention, Department of	11	11	11	3	0
Labor, Department of	7	6	0	0	6
North Carolina Community Colleges	6	5	5	4	3
Personnel, Office of State	2	1	1	0	0
Public Instruction, Department of	93	11	5	5	6
Revenue, Department of	13	4	1	1	4
Secretary of State, Department of the	4	1	1	1	1
State Board of Elections	6	4	3	0	1
Transportation, Department of	223	35	13	11	20
Treasurer, Department of the State	29	5	4	1	1
Wildlife Resources Commission	1	0	0	0	0
State Totals:	**1257**	**248**	**153**	**96**	**136**

Appendix 2 - Overview of Key Business Processes for IT Management

Application portfolio management (APM) is component of the IT management framework - Summary of Key Business Processes for IT Management that is illustrated in the diagram below.



The key business processes reflect the essential underpinnings of proficient IT management. These are: a) efforts and expenditures must be aligned with and support Governor and legislative priorities and strategic business initiatives; b) fundamental disciplines (such as strategic planning, portfolio management, enterprise technical architecture, service management, and application and infrastructure assets management) must be well ingrained in governance (i.e., decision making and policy formulation) processes; and c) personnel must be well trained in business concepts and technical skills.

The chart illustrates that IT management is a closed loop process. The flow of events and actions begins at the top with business strategies and governmental priorities and flows down through the selection of investments that enable the business initiatives; to the management of the projects for implementing the applications and supporting IT assets that accomplish the objectives and achieve

the benefits of the investments; to the placement of the completed investments into operation and the management of the technical services supported by them; and finally to the inventories of these application and infrastructure assets and the optimal management of them over their useful lives.

Feedback loops to the top planning and budgeting activity from the following project management, service management, and applications and infrastructure asset management activities provide new information for review, policy formulation, and decision making. Iterative work efforts include: recognizing new government imperatives and emerging business challenges, revisiting strategies, updating funding options and financial projections, reprioritizing projects and investments, and reallocating staffing and other resources – all a part of reinitiating the cycle of events.